

ABSTRACT

The present invention provides a tin-containing plating bath comprising:

- 5 (a) a soluble stannous salt, or a mixture of a soluble stannous salt and at least one soluble salt selected from the group consisting of copper salts, bismuth salts, silver salts, indium salts, zinc salts, nickel salts, cobalt salts and antimony salts; and
- 10 (b) at least one aliphatic sulfonic acid selected from the group consisting of alkanesulfonic acids and alkanolsulfonic acids,

the aliphatic sulfonic acid being a purified aliphatic sulfonic acid in which the total amount of sulfur-containing  
15 compounds as impurities consisting of compound(s) containing one or more sulfur atoms with an oxidation number of +4 or less in the molecule and compound(s) containing one or more sulfur atoms and one or more chlorine atoms in the molecule is a minute amount or less. A tin or tin alloy plating film with excellent  
20 reflowability, film appearance, etc. can be formed by the use of this plating bath.